MEETING MINUTES

HANFORD ADVISORY BOARD (HAB, Board)
Tank Waste Committee (TWC)
November 17, 2021
Virtual Meeting via Microsoft Teams

Topics in this Meeting Summary

This is only a summary of issues and actions discussed at this meeting. It may not represent the fullness of represented ideas or opinions, and it should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.

Opening

Ruth Nicholson, HAB Facilitator, welcomed meeting participants and informed participants that the meeting was being recorded.

Stan Branch, US Department of Energy (DOE), announced that this meeting was being held in accordance with the Federal Advisory Committee Act.

Bob Suyama, Benton County and TWC Chair, introduced the TWC overall. He explained that the TWC charter is a group on the HAB that focused on activities concerned with tank waste. He stated that the Hanford Site housed approximately 56,000,000 gallons of waste, with 144 waste tanks on site. The primary focus of the Hanford Site at the time was treating low-activity waste (LAW). He stated that the TWC was interested in the tanks themselves. Some were leaking, while others were in the process of stabilization. The Direct-Feed Low-Activity Waste (DFLAW) program has the goal of vitrifying waste, resulting in glass logs.

Bob stated that new members had the opportunity to join two committees other than the Public Involvement and Communications Committee (PIC). To do so, one would just need to send a message to the HAB Facilitation Team. He told new members to feel free to direct any questions to himself, Ruth, or any other member of the committee.

Ruth reviewed the agenda and the basics of virtual meeting etiquette. She noted that there was not a presentation on the Test Bed Initiative (TBI) and that agenda topic was instead a question-and-answer session.

The committee reviewed the draft meeting minutes for the August 2021 TWC meeting. The committee approved the minutes with no revisions.

Waste Treatment Plant (WTP) Phase Gate Process

Bob Suyama noted that the committee would typically request a critical path update on DFLAW, but the phase-gate process presentation would take the place of that in this instance.

Joe Renevitz, DOE, introduced himself. He stated that the goad of the presentation was to provide the HAB with an overview of the DFLAW support review program, which was used to ensure that individual phases of the program are complete and functioning properly before proceeding to the following phases. He noted that efforts were focused on shifting from an ad-hoc culture to an integrated one.

Joe explained that the phase gate process involved dividing the project into individual phases that were each accompanied by decision points referred to as “gates.” Each gate had a set of prerequisites that needed to be satisfied in order to move to the next phase, referred to as passing through the gate. Each gate was considered to be a “point of no return,” such as starting a melter or introducing radiological constituents. This process supported looking at activities across Hanford in a holistic manner to ensure the DFLAW would be supported in an integrated manner. It was imperative that everyone and everything was ready before passing through a gate.

Joe emphasized that the phase gate process was a stand-alone process and did not replace or duplicate any existing readiness process. It intersected with existing assessments and processes while examining other aspects, such as operational maturity, staffing, and many others.

He explained how gate passage decisions worked. He stated that prior to any gate-related date or milestone, the DFLAW program management would receive a summary report from all involved contractors that consisted of a self-assessment and identification of gaps and risks for DOE review. Using the self-assessments, in conjunction with DOE's own review, DOE would determine gaps and risks within and between contractors and provide recommendations to Hanford management.

Joe stated that the first gate, preparation for 24/7 site operations, was approved in July of 2021, with the next gate, Melter 1 heatup, presently under review. A decision was anticipated by the end of November 2021. He reviewed the subsequent gates: Melter 2 heatup and hot operations.

In conclusion, Joe explained that phases and gates made for an effective management tool that served to enhance integration among contractors, provide additional opportunities for self-assessment, enabled comprehensive evaluation of "people, plant, and paper," and affirmed mission needs and project approach for both contractors and DOE.

Regulatory Perspectives

Dan McDonald, Washington Department of Ecology (Ecology), provided some additional background for meeting participants unfamiliar with the phase gate process. He explained that it was an established process with proven effectiveness in the industry. For those interested, he stated that greater detail on the process could be found in the Project Management Body of Knowledge (PMBOK) 6th Edition, which was available online. He explained that an easy way to understand the process was to imagine a cattle drive that needed to pass through a variety of corrals. Each gate had a lot of requirements and could not be passed until all criteria were met to satisfaction by all parties involved. The goal was to characterize each gate thoroughly, along with the criteria required to pass through it.

Dan McDonald felt that the phase gate process application to the DFLAW program was a good thing. He emphasized that it was a separate process that did not take the place of anything else.

Committee Questions

Bob noted that the TWC had been following the critical path for the DFLAW project and felt that the phase gate process appeared to be at a higher level. He asked how the process was documented and, specifically, how progress was tracked up to each gate and how one would know where they were in the process. Joe explained that lines of inquiry (LOI) were established 100 days prior to reaching a gate. When the LOIs were developed, contractors were provided 35 days to go through the LOIs and provide evidence—items that should already exist, such as procedures—to show that they are ready to advance. If they could not provide the evidence, the contractor would instead need to communicate the gap. 3 The evidence of contractor readiness would be provided to Brian Vance, DOE, 30 days prior to each gate.

Bob clarified his question, wanting to understand how the day-to-day advancements were tracked. Joe explained that the parties were in constant communication and holding meetings to make sure they were on track.

Bob asked, with the goal of TWC following progress to DFLAW startup, if there was a point where Joe or his team could provide a status update, or some means of providing routine updates to let the TWC know how things were progressing. Joe thought there could be. He noted that the Melter 1 heatup was under review and that the evidence looked positive, but there were time-dependent items that could delay the gate. Bob asked how the gate tied into the critical path. Joe stated that the gate dates were dependent on critical path milestones; the gates themselves were not on the critical path and tried to be 30 days ahead of them. He explained that the gates were added for information purposes and were added relative to critical path milestones.

Ruth Nicholson read a question on behalf of Tom Carpenter, Hanford Challenge. He asked: "Has the DOE conducted an Operational Readiness Review for the Waste Treatment Plant (WTP) LAW operation?" Joe stated that DOE did not, as that would occur following cold commissioning and before hot commissioning.

Steve Wiegman, Public at Large and HAB Chair, introduced himself and expressed his appreciation for the presentation and thorough process. He asked if there was an associated risk management tool, and if so, what might have been identified that would impact success. Joe stated that existing risk management processes were used. As risks were identified, they were entered into the risk register and followed through to resolution. The biggest concern was that the DFLAW program was a huge endeavor involving multiple contractors over a huge area. He wondered if that could be covered completely, stating that "you don't know what you don't know." Dan McDonald contributed, providing additional detail of risk categorization.

Shelley Cimon, Columbia Riverkeeper, asked how the phase gate process might be applied in the transition from startup into operations. Joe explained that the process was specific to Bechtel's scope. The fourth gate, hot operations, was the last gate in the process. All gates were before operations.

Esteban Ortiz, Green Latinos, noted his concern for potentially unplanned variables and new technologies or equipment in use at the plant. He asked if there was adequate training and staffing, budget, and communications protocols in place to handle unplanned or emergency situations, particularly during off-hours. Joe explained that each of those aspects were examined as part of the contractor readiness reviews. Systems testing would go through abnormal operating conditions, and there was simulation training for contractor staff. A wide array of abnormal events were considered and planned for.

Rob Davis, City of Pasco, noted that the phase gate process was a startup tool that had been used in the microelectronics industry for years. He stated that the tool just went up to plant startup and was not used on an ongoing basis. Each of the things it considered were existing contract deliverables, and all components were already considered in the design. Joe confirmed that, in this case, phase gate was being used to support startup of DFLAW.

Dan Solitz, Oregon Hanford Cleanup Board, asked how the phase gate process would integrate with the indefinite delivery/indefinite quantity (ID/IQ) contracting method planned for the site. Joe stated that the process was focused on the contractors that were on site at that time through commissioning of DFLAW, which was Bechtel's scope.

Pam Larsen, Benton County, noted that a new entity was planned to operate the plant. She asked for a status report on that and how a new contract might be implemented as operations begin. Joe stated that he was unable to comment on that. Pam asked that the TWC consider that question for a future meeting.

Bob asked Joe what the best time to have him back for an update might be. Joe stated that the results from the second gate would be available in January 2022, so the February 2022 TWC meeting would be a good time.

In conclusion, Bob stated that the process appeared helpful in making key decisions. He looked forward to hearing what was learned in passing the second gate.

Tank Integrity Report

Karthik Subramanian, Washington River Protection Solutions (WRPS), introduced himself and his presentation topic. The presentation would focus on tank observations made in the SX tank farms and how the tank integrity program was applied, including structural evaluations performed, conclusions drawn, and the path forward for that tank farm.

Karthik provided some history of the SX tank farms. On the Hanford Site, there were 149 total single-shell tanks (SST) on the site, each with varying capacities. Those in the SX farm were type 4-A, which had a capacity of 1-million-gallons and were built to support Reduction-Oxidation Plant (REDOX) operations. The tanks underwent interim stabilization in the 1970s and 1980s.

He explained that the Hanford Site has an integrity program that has been successful in detecting changes in the conditions of tanks. As a part of this program, structural analysis of the tanks and domes are regularly conducted. As a result of analyses performed in early 2020, concrete spalling was observed in tank SX-112. When that was observed, the program when into "conservative mode," initiating extent of condition evaluations. The SX farm underwent closer observation under the tank integrity program due to detection of concrete spalling.

Evaluations were performed by successfully applying new technologies, such as laser scans, in addition to video inspections. Karthik reviewed design of the tanks, noting the conservative design features implemented, and reviewed the locations of concrete spalling observed against those designs. He reviewed photos of the concrete spalling within the multiple SX farm tanks, from the initial observation through late 2021. He reviewed the findings of laser scans, which allowed the condition of the rebar to be examined and allowed for an approximation of the spalling depth. This data was applied to a Pacific Northwest National Laboratory (PNNL) structural analysis. The tank integrity program-mandated structural engineering evaluation concluded that the tanks remain structurally sound and that the spalling does not pose a threat to

the structural integrity of the tank. The PNNL analysis concurs with that evaluation. The tanks remain safe for storing waste.

In conclusion, Karthik reiterated that the site maintains a robust structural integrity program, and when something is observed under the program, the condition is aggressively monitored to ensure operational safety. The observation and evaluation capabilities under the program have been enhanced with the addition of laser scanning, providing quantifiable data. Though the analyses concluded that the SX farm tanks remain safe, the team will continue to monitor the tanks at an increased frequency. Going forward, the team will continue to maintain the rigor of the integrity program and capitalize on applicable new technologies. They will continue to respond to emergent issues and continue consulting with PNNL and the Tank Integrity Expert Panel.

Regulatory Perspectives

David Bowen, Ecology, asked if PNNL's report on the subject had been released. It was his belief that the report was still under review and hoped to see it, if available. He noted that he appreciated the conservative manner in which the tanks were engineered.

Steve Lowe, Ecology, recalled the condition of tank AY-102. When that tank leaked and waste was retrieved, there was a hope that the tank could be repaired. However, when the retrieval efforts reached the bottom of the tank, it was discovered that the bottom was so badly corroded that it could not be repaired. That condition was not observed on the sides of the tank. He noted that the highest temperatures were always at the bottom of the tank. That event made him question the viability of plans to grout the Hanford Site tank waste, which was hoped to be a waste storage solution for thousands of years. Karthik explained that, through core sampling from high temperature tanks, analysis showed that high temperatures did not affect the compressive strength of concrete. The spalling observed appeared to be a result of a different mechanism than temperature effects and was believed to be rebar-related instead.

Jeff Lyon, Ecology, wanted to emphasize that he appreciated the interest and effort DOE makes in the integrity program and expert panel. He asked if there were predictions of spalling in tanks after a certain point of time and, now that it was known, does the information help in understanding future deterioration expectations? Karthik explained that there was no official prediction of where or when spalling might occur, but it was expected. PNNL previously examined the removal of concrete in analysis of structural integrity. When spalling was discovered in tanks, that analysis was referenced.

Committee Questions

Steve Wiegman noted that the conversation was valuable and thanked the agencies for the presentation and comments. He noted that, as Karthik was explaining the history of the tanks, there was mention that the tanks were "cascaded" and asked if that could be explained for new HAB members. Additionally, he noted that, when saltwell pumping was completed, there was a determination of how much liquid remained in a tank, both leakable and pumpable. He asked for comment on that, too. Karthik stated that, regarding liquid levels, the tanks were stabilized long

ago. When looking at the waste inventory today, it was shown that there was no supernatant in the SX farm. It consisted of sludge and saltcake, with no interstitial liquid. He explained that cascading tanks were linked. When one was filled to a certain capacity, waste would drain, or cascade, to the next tank in sequence. Steve asked if there was any waste discharge to the soil in the SX farm. Karthik confirmed that there was not.

Steve Anderson, Grant and Franklin Counties, asked about high heat at the bottom of tanks, wondering if it was responsible for saltcake. Additionally, he asked if there were other farms subject to temperatures over 300ºF and if there were other SSTs with liquid content. Karthik stated that there were other SSTs with some fraction of supernatant, but it consisted primarily of non-drainable interstitial liquid. He stated that, other the SX and REDOX tanks, the A Farm was subject to the highest temperatures. He explained that dry saltcake was a result of high temperatures, as liquid evaporated with high temperatures.

James Alzheimer, Ecology, noted that one of the hottest tanks was A-106. They did a core wall drill to do a strength test with that tank, which showed that the concrete was well above the requirements for compressive strength. He felt that the values used in the tank structural analyses were very conservative and likely based on the values for general concrete. Through analysis, the heat effects on structural concrete have been shown to be minimal. He suggested that the spalling was most likely a result of moisture rusting the rebar and pushing the concrete off. He stated that it looks bad in photographs, but is not likely to have a significant effect.

Jeff Lyon noted that there were at least five tanks in S/SX farms that were experiencing water intrusion and asked Karthik what that meant for supernatant content. Karthik stated that, from an engineering standpoint, one would not consider intrusion to be supernatant. He stated that the tanks were very dry.

Rob Davis, asked, with the identification of spalling in the SX tanks, if the mechanism for water infiltration be identified. Additionally, were it was coming from outside of the tank, if the team was looking for cracking or another intrusion point. Karthik stated that it seemed to be a subsurface question that was difficult to answer at that time. The team was still in the investigation and monitoring process.

Bob Suyama thanked Karthik, noting that the presentation was excellent and timely. Bob noted that the tanks were over 65 years old and asked, as part of the structural evaluation, if an estimate was given as to how long those tanks would be structurally sound. Karthik stated that it was not, but as the investigations continued, a rate mechanism could be discovered that could provide the knowledge to determine that information. Karthik emphasized that the SX tank farm was different in both design and use than many other tanks on the site. Bob asked if there was an engineering and design life given when the tanks were constructed. Karthik stated that he did not know immediately but expected that they had exceeded their design life. Jeff noted that the integrity assessments stated specifically that the design life had been exceeded.

Steve Wiegman noted that the tanks were previously isolated and sealed, yet still experiencing water infiltration. He asked if there was anything that could be done to prevent it. Karthik stated that numerous things have been done to prevent it. SX farm now had a barrier on top and cascade

lines had all been cut and capped, but there were still means of intrusion, such as subsurface flow.

Jeff Burright, Oregon Department of Energy, noted that SX farm has a significant quantity of drainable interstitial liquid, noting previous discussion of liquid content where supernatant was a focal point. He proceeded to define the difference between supernatant and interstitial liquid, and a subset of interstitial, drainable interstitial liquid. He reviewed a chart from a recent tank waste status report and explained the tank contents as listed. Following, he posed a hypothetical question to Karthik: what might it look like, and what new challenges would arise, if there was a tank dome collapse.

Karthik stated that was a scenario that they wanted to absolutely avoid. From a safety standpoint, there was nine feet of soil in addition to concrete over the dome, so the tank would quickly be encapsulated. He emphasized, however, that everything possible was being done to prevent a collapse. Jeff Burright summarized his response, stating that it sounded like there would not be a concern over a "poof" occurring, but it would make waste much more difficult to retrieve.

Rob asked when the PNNL report might be available or if a TWC member could obtain copies. Karthik stated that the report was only just released and needed to go through a clearance process. He stated that it would be provided when available.

Bob thanked Karthik for his time and asked that he continued to provide the TWC with information as it became available.

Draft Advice on Tank Leaks

Bob Suyama introduced the topic, noting that the advice was presented at the previous full Board meeting where there were no actions taken. However, it was reworked based on the comments received during and since that meeting.

Jeff Burright provided a brief history of the advice. He explained that, in May of 2021, DOE formally declared an SST leak, specifically B-109. The HAB received presentations and perspective from DOE and Ecology on the subject. He suggested new members go to the HAB YouTube playlist if they wished to review the previous discussions.

Within the TWC, Jeff explained, it was discovered that for B-109 and SSTs at large there was no plan in place to address the leak or future leaks that could develop. There were still approximately 3.4 million gallons of drainable liquid in the tanks and decades remaining before it could all be retrieved and treated. He stated that despite DOE's extensive effort in draining tanks, the TWC wanted to investigate and see if there was more that could be done.

Jeff explained that the draft advice being presented at the day's meeting was different from what was seen at the September Board meeting and reviewed the primary differences. While it still discussed B-109 as a background for the advice, the advice was intended to expand the focus to the SSTs across the site to consider means of abating future leaks. There were "kudos" added where possible for the agency response and engagement on the issue. The specific advice points had changed. Where they initially provided specific technical recommendations for retrieval, they now asked for plans to be developed and for a pilot test. It advised development of a

program with the intention of actively mitigating and "getting ahead" of potential leaks, as many members of the committee felt that it presently took too long to mobilize where leaks were suspected or discovered. He noted that it also incorporated a comment from Richard Bloom, City of West Richland, where he hoped to investigate the possibility of a "suction effect" that might contribute to the leak. The advice asked for a risk-benefit analysis of potential options, including a do-nothing approach.

Jeff Burright asked to hear the thoughts of the committee, including new members. Ruth Nicholson provided a short overview of the advice development and approval process.

Edits were made to the advice during the ensuing discussion.

Pam Larsen stated that there were some aspects of the advice that she supported and others that she had significant objections to. She noted limitations in both funding for Hanford site operations overall and the lack of transfer lines and related infrastructure to many SSTs. She felt that the advice did not respect the federal budget process, stating that Hanford was already receiving record funding and that the advice demanded even more, which was not supportable and jeopardized the credibility of Hanford. She provided specific change requests to advice sections throughout the document.

Esteban Ortiz stated that he was thankful for the review. He commented that he hoped for the advice to maintain the perspective of a realist and to consider how funding and resources could be used in the most effective way possible in advancing cleanup goals for the site.

Gerry Pollet, Heart of America Northwest, pointed out that the advice, as it was presently written, started out with the HAB's values, stating that allowing a tank to leak was a setback to all cleanup efforts. He stated that the point of the spending at Hanford was to keep tank waste out of the soil and groundwater. He explained that it was understood that there was no existing infrastructure, and the advice acknowledges such, but advised evaluation and testing of a method of retrieval that did not require transfer lines, utilized on-hand equipment, and already had funding from Congress. Following some clarifying questions, Pam stated that she agreed with the associated advice points in concept.

David Reeploeg, Tri-City Development Council (TRIDEC), agreed with the concerns stated over cost. He stated that, while the tank leaks were concerning, that they amounted to a comparatively inconsequential volume of waste. He stated that the larger question of appropriations and funding was a very real one. In his experience talking to appropriations staff, they have made it very clear that they do not want funds used for non-cleanup purposes or "new, shiny objects" and have made it clear that there was no other place to draw funds from. He wanted to ensure that the advice was thoughtful and considerate in what was asked for, in that regard.

David supported using tank B-109 as a test case. He stated that it was his understanding that enhanced saltwell pumping was not a substantial cost in Hanford terms and seemed sensible to ask for as a demonstration. He asked if there were estimates of the potential cost. Gerry stated that the fabrication of the equipment was estimated to be under $200,000, with waste processing under $1/50^{th}$ of the cost per gallon compared to DFLAW. Considering deployment and staffing, the referenced estimate amounted to less than $10 million to drain interstitial liquid from B-109.

For deploying for the initial demonstration the advice asked for, it was estimated at closer to $2 million and could be drawn from already-established Test Bed Initiative (TBI) funding.

Marissa Merker, Nez Perce Tribe, stated that, although some may see the amount of waste leaked from B-109 as trivial, those individual trivial amounts add up. She explained that the land is culturally significant with some having ties to the land and did not wish to allow the land to become contaminated further. She stated that Congressional staff need to be aware of the specific situation at Hanford; it was the most contaminated site in the western hemisphere and unlike other sites in the DOE Complex. She agreed that introduction of waste to the ground was problematic and wanted to address the issue as a balancing act, not wanting to incur a cost that impacts advancing bigger threats to the environment sooner, understanding that there was no perfect answer or solution to the issue. She stated that she has spent years working with the Congressional delegation and understood how hard the site's congressional delegates work to obtain funding for the site. She stated that they needed to face the reality that there was only so much support in Congress, even for the most contaminated site.

Steve Anderson noted that the publicity from a leaking tank demanded quick response. He felt that if a faster response could be achieved and quash negative views of the public, it made sense to pursue that.

The committee began to move through the advice paragraph by paragraph, making necessary changes in wording throughout the document.

Next Steps

The committee felt that the document was ready for presentation to the full Board. Steve Wiegman noted that he was not in agreement on previous versions but supported the advice following the revisions and rewrites. He felt it would make a good topic for a Committee of the Whole (COTW), if people were willing to wait that long.

Open Forum

Bob Suyama explained that open forum was an opportunity for committee members to bring up new topics of discussion or ideas for discussion in the future. He noted that Jeff Burright and Steve Wiegman represented Oregon and the HAB, respectively, at a recent National Academy of Sciences discussion supporting a study for supplemental waste treatment options. He asked if they could provide an overview of their experience.

Steve Wiegman stated that the scope of the study was to discuss options for treatment beyond the first LAW plant at Hanford. The results of the Academy's review, and possible the results of holistic negotiations, would inform what the Hanford Site should do next. He stated that, for his part, he informed the Academy that the HAB has not yet had those discussions. There may be an opportunity for the HAB to express its views on the matter in the future. Dan McDonald clarified that the research was federally funded and performed, while the National Academy of Science was overseeing and confirming the accuracy of the work.

Jeff Burright provided additional background into the study, explaining that previous studies looked at options such as grout, glass, and steam reforming. Though they were good ideas, there

were too many uncertainties. This study was the second round and would look deeper to provide the data necessary to decide on the matter. It was Jeff's impression, when considering the annotated outline of the study at that point, that it was no longer a decision of if grout would be used at Hanford and rather a decision of how it would be used. He felt, however, that the glass options being considered were not taking new technological advancements into account.

Jeff noted that it was difficult for the HAB to hold discussion on the topic or determine a position on strategy due to the dependence on the results of holistic negotiations. He stated that it seemed that the Academy group did not seem to know the results or status of the negotiations either, which ran the risk of their studies scenarios being out of step with TPA agency plans. He also noted that there was an idea put forth that the drinking water standards employed at Hanford are too protective, having been developed in the 1950s, and updating the standards could affect the effectiveness of grout at Hanford.

Bob asked if there would be a point in time where the HAB should weigh in on the matter. Steve Wiegman stated that was difficult to determine, but the committee should continue to follow the study.

Test Bed Initiative (TBI) Questions

Brian Harkins, DOE, joined the meeting to provide answers to committee questions on TBI. As an introduction, and to ensure the participants were up to speed on the subject, he stated that DOE recently released a draft Waste Incidental to Reprocessing (WIR) for public comment that was presently out for a 90-day comment period. A virtual meeting on the topic would be held the following day, and there would be opportunity to submit comment outside of that meeting. The WIR proposed ultimate disposal of the waste at a commercial facility outside of Washington state. DOE was consulting with the Nuclear Regulatory Commission (NRC), and upon addressing any comments, DOE would publish the WIR determination. That would satisfy documentation requirements under the National Environmental Policy Act (NEPA). If successful, DOE would enter the permitting process to request a demonstration permit under the Resource Conservation and Recovery Act (RCRA).

Brian explained that a benefit of TBI would be that the information gained from the process would be able to inform decisions on future processes. DOE hoped to demonstrate the viability of offsite disposal, which could result in significant cost savings.

Steve Wiegman was curious if the results of this demonstration would allow the site to remove or move other waste that was unwanted to a safer location. Brian stated that Texas and Utah disposal facilities have waste acceptance criteria (WAC) different than Hanford. The demonstration was to show the viability of an alternate path for disposing waste, outside of Washington. He noted that the waste disposal location in Texas—the one he was more familiar with—had an advantageous geological formation. He stated that he heard it described as a "giant kitty litter box," preferable to the sand type at Hanford.

Bob Suyama stated that he believed the demonstration would involve 2,000 gallons of waste. He asked if that volume was the limit for the demonstration and what the schedule for the demonstration was. Brian stated that the demonstration has a 2,000-gallon limit. If a problem

was encountered, the demonstrated volume would be less, and they could not exceed 2,000 gallons. He stated it was difficult to state the schedule with precision. The anticipated deployment was late the following year, but many steps needed to be taken that could push the schedule out for as far as a year more. Bob asked, if the demonstration was successful, if the full process would need to be followed again to utilize the waste treatment and disposal method in the future. Brian confirmed that it would; the WIR and all subsequent steps would need to be followed on a non-demonstration basis.

Rob Davis asked if the demonstration equipment was ready or if a significant portion of the lead time involved procuring the equipment. Brian stated that the parts were in storage, but modifications were required. Rob asked how long it would take to get a decision from DOE on which tank to retrieve. Brian explained that it was already decided that tank SY-101 would be used for the demonstration. The tank was chosen because it had a large volume of liquid contents with minimal solids. Little waste was added on a routine basis, meaning that the solids in the tank have settled. He explained that, though TBI could filter solids, it was not designed to handle them and needed to be put into a tank with few solids and where DOE had a strong understanding of the tank chemistry. Additionally, the team focused on the west area of the site to reduce interference with startup of DFLAW. Finally, Rob asked about the point at which the demonstration would be considered complete and successful. Brian confirmed that, upon offloading grouted waste in Texas, the demonstration of equipment, process, technique, and shipment would be considered complete and successful.

Dan Solitz noted that there was a statement in the WIR that suggested that the High-Level Waste (HLW) Facility was still under construction. Additionally, he asked for clarification on the WAC for Texas, wondering if it would also be suitable for the Integrated Disposal Facility (IDF) at Hanford. Brian stated that the construction of the HLW facility had started, but was paused for the time being, meaning that statement in the WIR was accurate. He explained that the group processes and formulations used in TBI were predicted to easily meet the WAC for the Texas facility, which was far more favorable. It was presently unknown if it would meet the WAC for IDF; more would be known once the waste was grouted.

Committee Business

In preparation for the next TWC meeting on February 9, 2021, the committee considered potential agenda topics. Conversation shifted to difficulties stemming from the unknown state of holistic negotiations, as many desired topics of interest were depended on understanding the outcome of the negotiations. The committee considered forming an Issue Manager (IM) on the matter. Though it was unclear what the IM team could accomplish, members felt it would provide an opportunity to explore options on the matter. Bob Suyama agreed to discuss the option with the Executive Issues Committee.

Bob proposed potential topics to include an update on the Tank-Side Cesium Removal (TSCR) system, which should have passed a readiness review, and the first DFLAW melter heatup. He noted that committee leadership elections would be held in February and encouraged interested

potential chairs or vice chairs to submit their names. Both self-selection and nominations were acceptable.

To assist in planning, Gary Younger offered to examine which topics from the TWC's list of options may be feasible for the next meeting.

Meeting Recording

https://youtu.be/GMmV2MCzOzI

Attachments

Attachment 1: Deputy Designated Federal Officer Slide

Attachment 2: Meeting Agenda

Attachment 3: Draft Meeting Minutes for TWC August 11, 2021 Meeting

Attachment 4: DOE Presentation – Phase-Gate Approach

Attachment 5: DOE Presentation – Tank Integrity Program Update

Attachment 6: TWC Draft Advice on Tank Leaks

Attendees

Board Members and Alternates:

Bob Suyama, Primary	Dan Solitz, Primary	Denise Jones, Primary
Esteban Ortiz, Primary	Gerry Pollet, Primary	Jacob Reynolds, Primary
Liz Mattson, Primary	Maxwell Woods, Primary	Rob Davis, Primary
Shelley Cimon, Primary	Steve Anderson, Primary	Steve Wiegman, Primary
Susan Coleman, Primary	Jeff Burright, Alternate	Leslie Koenig, Alternate
Marissa Merker, Alternate	Mason Murphy, Alternate	Pam Larsen, Alternate
Tom Carpenter, Alternate	Vince Panesko, Alternate	

Others:

Brian Harkins, DOE	Dan McDonald, Ecology	Tyler Oates, Bechtel
Cameron Hardy, DOE	David Bowen, Ecology	Cerise Peck, HMIS
Delmar Noyes, DOE	Ginger Wireman, Ecology	Coleen Drinkard, HMIS
Gary Younger, DOE	James Alzheimer, Ecology	Dana Cowley, HMIS
Geoffrey Tyree, DOE	Ryan Miller, Ecology	Patrick Conrad, HMIS
Joan Lucas, DOE	Steven Lowe, Ecology	Thomas Brouns, PNNL

Joseph Renevitz, DOE	Tom Rogers, Washington State Department of Health	David Saueressig, WRPS
Paul Noel, DOE		Destry Henderson, WRPS
Stan Branch, DOE		Gregory Smith, WRPS
		Karthik Subramanian, WRPS
		Mark Knight, WRPS
		Ruben Mendoza, WRPS
		Terese Meyer, WRPS
		Miya Burke, Hanford Challenge
		Josh Patnaude, HAB Facilitation
		Olivia Wilcox, HAB Facilitation
		Ruth Nicholson, HAB Facilitation

Note: Participants for this virtual meeting were asked to sign in with their name and affiliation in the chat box of Microsoft Teams. Not all attendees shared this information. The attendance list reflects what information was collected at the meeting.